

comprises: means digitizing successive portal images to generate successive sets of digital portal image signals, and tracking means tracking movement between successive sets of digital portal image signals.

*Sturm* is directed to apparatus for positioning a body part for treatment purposes which requires the use of a pair of video cameras and at least four marks which are attached to the body part, such as, for instance, a patient's head. In the described embodiment in *Sturm*, the marks are dowels which are fixed in the bone of the patient's cranium. It is said alternatively the marks can be attached to a mouthpiece fitted to the patient's teeth (*Sturm* Col. 4, lines 33-39). The two cameras are both required to triangulate the position of each of the multiple marks. A center of gravity of the configuration of marks is then calculated and compared with a previous calculation of this point to determine movement.

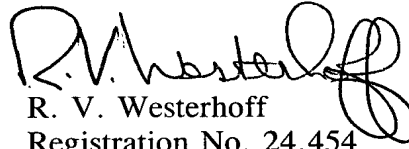
The apparatus of Claim 21 is totally different. It involves matching successive digitized portal images. Portal images are x-ray images made by the radiation beam after it has passed through the patient. For purposes of Claim 21, the portal image is captured by an electronic portal imager which digitizes the x-ray image. There is only one ray beam and one portal imager. Hence, the tracking called for in Claim 21 is effected by the movement detected in successive images generated by the single portal imager.

*Sturm*, on the other hand, is a stereo-video system which requires at least two video cameras simultaneously recording images of marks fixed to the patient. Thus, *Sturm* discloses an entirely different apparatus which operates in an entirely different manner to achieve a similar result, detection of movement of a patient. There is nothing in the stereo-camera system of *Sturm* which would in any way suggest the apparatus of Claim 21 which utilizes the single x-ray image generated by a portal imager to track movement of a patient.

Claims 22 through 25 were objected to as depending from the rejected base claim, Claim 21. In view of the patentability of Claim 21, this objection to the dependent claims becomes moot. It is noted that it has been indicated that Claims 1-20 and 26-28 are allowed.

In view of the above, reconsideration and allowance of Claim 21 as now presented is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "R. V. Westerhoff", with a large, stylized flourish at the end.

R. V. Westerhoff  
Registration No. 24,454  
Eckert Seamans Cherin & Mellott, LLC  
600 Grant Street, 42nd Floor  
Pittsburgh, PA 15219  
Attorney for Applicants

January 12, 1998  
(412) 566-6090